(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 110 346**
A1

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **83111826.0**

(51) Int. Cl.³: **A 44 B 19/36**

(22) Date of filing: **25.11.83**

(30) Priority: **06.12.82 JP 184623/82 U**

(43) Date of publication of application: **13.06.84**
Bulletin 84/24

(84) Designated Contracting States: **BE DE FR IT NL**

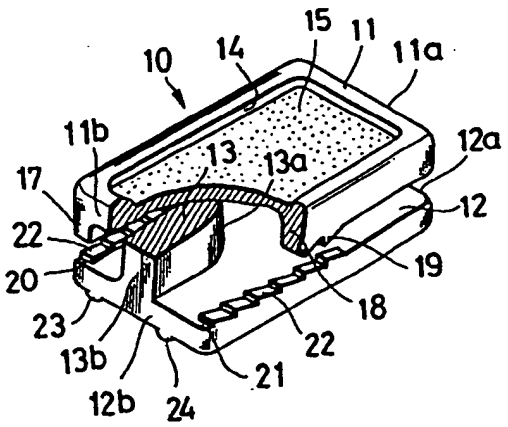
(71) Applicant: **YOSHIDA KOGYO K.K., No. 1 Kanda Izumi-cho Chiyoda-ku, Tokyo (JP)**

(72) Inventor: **Sadaho, Asahi, 4-21, Muraki-cho Uozo-shi, Toyama-ken (JP)**
Inventor: **Hiroo, Minami, 1370-7, Tomomichi Uozo-shi, Toyama-ken (JP)**

(74) Representative: **Patentanwälte Leinweber & Zimmermann, Rosental 7/II Aufg., D-8000 München 2 (DE)**

(54) **Bottom stop for slide fasteners.**

(57) A bottom stop (10) with an ornamental design (15) thereon has a pair of upper and lower rectangular plates (11, 12) spaced from each other and integrally joined by a connector post (13) located adjacent to one end (11b, 12b) of each of the upper and lower plates (11, 12). The upper plate (11) has a pair of longitudinal side flanges (17, 18) having rows of sawteeth (19), and the lower plate (12) has rows of sawteeth (22). The bottom stop (10) can be attached to a slide fastener by inserting stringer tapes between the upper and lower plates (11, 12) with an end of rows of coupling elements held in abutment against the connector post (13), and then bending lateral portions of the lower plate (12) adjacent to the connector post (13) toward the upper plate (11) until the stringer tapes of the slide fastener are gripped firmly by and between the sawteeth (19, 22) on the upper and lower plates (11, 12).



EP 0 110 346 A1

BOTTOM STOP FOR SLIDE FASTENERS

The present invention relates to a bottom stop mounted on a pair of companion slide fastener stringers across a bottom end of a pair of intermeshing rows of coupling elements and having a surface for bearing an ornamental pattern.

Ornamental bottom stops for slide fasteners have longer and wider dimensions to provide a surface large enough to bear a suitable decorative pattern than those of ordinary slide fastener bottom stops. One known type of such bottom stop is disclosed in Japanese Utility Model Publication No. 49-37763 published on October 16, 1974. The disclosed bottom stop is composed of a fastening member and a stiffening member. The fastening member has a channel-shaped cross section including a plurality of pointed clinching legs for penetrating slide fastener stringer tapes. For attachment, the fastening member is placed on one side

of the slide fastener at a bottom end thereof while the stiffening member is placed on the other side in alignment with the fastening member. The fastening member is pressed against the slide fastener until the pointed clinching legs pass through the stringer tapes. Then, the pointed clinching legs are bent into clinching engagement with the stiffening member to hold the fastening and stiffening members firmly together. The ornamental bottom stop is dimensionally larger than normal bottom stops and should be securely attached to the stringer tapes to avoid unwanted positional displacement or unstability. One proposal would be to provide as many or large pointed clinching legs as possible. However, they would damage and reduce the strength of the stringer tapes to an undesirable extent. Fewer or smaller pointed clinching legs would fail to secure the bottom stop to the tapes with a sufficiently large strength. Another problem is that if the pointed clinching legs were staked on the stiffening member under too a strong force, then the fastening member and the stiffening member would tend to be deformed, resulting in an impaired ornamental design. The prior bottom stop also has had a drawback in that the clinching legs are liable to turn up off the stiffening member while in prolonged use, particularly under rough usage. When this happens, the fastening and stiffening members are likely to be

disassembled, and the clinching legs as they project may damage the wearer's clothes and injure the wearer's body.

The present invention seeks to provide a bottom stop having an ornamental pattern which can be attached firmly and easily to slide fastener stringer tapes and remain attached to the stringer tapes securely for a long period of time.

According to the present invention, there is provided a bottom stop for a slide fastener, comprising a pair of first and second elongate plates spaced from each other in parallel relationship, and a connector post interconnecting said first and second plates at a transversely central position, characterized in that said first and second plates have rows of sawteeth along longitudinal edges thereof facing each other, and in that one of said first and second plates has a pair of laterally spaced ridges disposed on a surface thereof remote from the other plate one on each side of said connector post equidistantly therefrom.

Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which preferred structural embodiments incorporating the principles of the present invention are shown by way of illustrative example.

Figure 1 is a perspective view, partly cut away, of a bottom stop according to the present invention, the view showing the bottom stop as viewed from above;

Figure 2 is a perspective view of the bottom stop which is illustrated as viewed from below;

Figure 3 is a perspective view of a bottom stop according to a modification;

Figure 4 is a front elevational view, partly broken away, of the bottom stop of Figures 1 and 2 as it is attached to a slide fastener;

Figure 5 is a cross-sectional view taken along line V - V of Figure 4; and

Figure 6 is a cross-sectional view taken along line VI - VI of Figure 4.

The principles of the present invention are particularly useful when embodied in a bottom stop, generally designated at 10, as shown in Figures 1 and 2.

The bottom stop 10 is basically composed of a pair of rectangular upper and lower plates 11, 12 of substantially the same size. The upper and lower plates 11, 12 are spaced from each other and integrally joined together in parallel relationship by a connector post 13 having a bullet-shaped cross section and positioned transversely centrally of the plates 11, 12. The connector post 13 has a front end 13a located remotely from ends 11a, 12a of the upper and lower

plates 11, 12 and a rear end 13b lying flush with opposite ends 11b, 12b of the upper and lower plates 11, 12.

The upper plate 11 has an upper recessed surface 14 having a suitable ornamental design 15. The upper plate 11 includes a pair of longitudinal side flanges 17, 18 extending over the full length of the upper plate 11 and projecting toward the lower plate 12. The side flanges 17, 18 are spaced from each other transversely of the upper plate 11. Each of the side flanges 17, 18 has a row of sawteeth 19 on a lower surface facing the lower plate 12. The row of sawteeth 19 extends longitudinally from the end 11b toward the end 11a for an interval longer than the connector post 13, but terminates short of the end 11a. The lower plate 12 has on each of side edges 20, 21 facing the upper plate 11 a row of sawteeth 22 extending longitudinally from the end 12b toward the end 12a for an interval longer than the connector post 13 and terminating short of the end 12a. The rows of sawteeth 19, 22 have the same length and the sawteeth 19, 22 are progressively tapered off toward the ends 11a, 12a as better shown in Figure 5.

The lower plate 12 has a pair of transversely spaced ridges 23, 24 of a partly circular cross section disposed one on each side of the connector post 13 equidistantly therefrom and extending longitudinally

over the full length of the lower plate 12 on a surface thereof remote from the upper plate 11.

As shown in Figures 4 through 6, a slide fastener 25 to which the bottom stop 10 is to be attached comprises a pair of stringer tapes 26, 27 supporting on their inner longitudinal edges a pair of rows of coupling elements 28, 29 sewn respectively to the inner longitudinal edges of the stringer tapes 26, 27 by sewing threads 30, 31 passing through reinforcing cores 32, 33 inserted through the rows of coupling elements 28, 29, respectively. For attaching the bottom stop 10 to the slide fastener 25, the bottom stop 10 is brought over the slide fastener 25 from a lower end 34 thereof with the ends 11a, 12a ahead by inserting the stringer tapes 26, 27 between the upper and lower plates 11, 12 until the connector post 13 is held against a lower end of the rows of coupling elements 28, 29 with the stitched reinforcing cores 32, 33 positioned one on each side of the connector post 13. Since the sawteeth 19, 22 are progressively tapered off toward the ends 11a, 12a, the stringer tapes 26, 27 can easily be inserted between the upper and lower plates 11, 12. Then, the upper and lower plates 11, 12 are staked or pressed into gripping engagement with the stringer tapes 26, 27 by appropriate means such as a press. Any pressing force applied to the lower plate 12 is imposed through the

ridges 23, 24 which are in contact with the pressing member (not shown). The central portion of the lower plate 12 which is located directly below the connector post 13 is prevented by the latter from being deformed, and the lateral side portions of the lower plate 12 are obliquely deformed under the applied pressing force toward the upper plate 11 as shown in Figure 6 until the ridges 23, 24 lie flush with the central portion of the lower plate 12 with a result that the sawteeth 19, 22 on the upper and lower plates 11, 12 are forced into biting engagement with the stringer tapes 26, 27. Since the lateral sides of the lower plate 12 adjacent to the connector post 13 are obliquely bent toward the upper plate 11, the sawteeth 22 on the lower plate 12 bite the stringer tapes 26, 27 at an angle, thus holding the stringer tapes 26, 27 securely in place. With the sawteeth 19, 22 tapered off toward the ends 11a, 12a, the bottom stop 10 can be held in position against the pulling force applied thereto by operator's fingers in a direction away from the ends 11a, 12a when a slide fastener is closed. The oblique plastic deformation of the lower plate 12 enables the latter to remain staked without the tendency to resiliently restore its original shape during a long period of use. The portion of the lower plate 12 between the front end 13a of the connector post 13 and the end 12a of the lower plate 12 is pressed toward the upper plate 11 in

parallel relationship with the stringer tapes 26, 27 and the coupling elements 28, 29 sandwiched therebetween.

The press for staking the bottom stop 10 in place on the slide fastener 25 should have a die for backing the upper plate 11 and a punch for pressing the lower plate 12 toward the upper plate 11, the die and the punch having flat confronting surfaces. The bottom stop 10 can therefore be attached simply by the press to the slide fastener 25 without piercing or otherwise damaging the stringer tapes 26, 27, and hence without reducing the mechanical strength of the slide fastener 25. The upper plate 11 is undeformed during the pressing operation, so that the ornamental pattern 15 thereon is free from any damage. Accordingly, the bottom stop 10 remains highly effective in providing a desired decorative effect after it has been attached to the slide fastener 25.

Figure 3 illustrates a modified bottom stop 40 comprising upper and lower rectangular plates 41, 42 spaced from each other in parallel relationship and integrally joined by a connector post 43. The upper plate 41 has a pair of longitudinal side flanges 44, 45 projecting toward the lower plate 42 and having respective rows of sawteeth 46, 47, and the lower plate 42 also has a pair of longitudinal side flanges 48, 49 projecting toward the upper plate 41 and having

respective rows of sawteeth 50, 51 aligned with the rows of sawteeth 46, 47, respectively. The lower plate 42 also has a pair of longitudinal ridges 52, 53 on a surface thereof remote from the upper plate 41 and spaced transversely from each other. With the arrangement shown in Figure 3, the sawteeth 50, 51 are spaced from the sawteeth 46, 47 by a distance smaller than that between the sawteeth 19 and the sawteeth 22 of the bottom stop 10 shown in Figures 1 and 2. This allows the bottom plate 42 to be deformed to a smaller extent in gripping the stringer tapes between the sawteeth 46, 47 and the sawteeth 50, 51.

Claims:

1. A bottom stop for a slide fastener, comprising a pair of first and second elongate plates (11, 12; 41, 42) spaced from each other in parallel relationship, and a connector post (13; 43) interconnecting said first and second plates (11, 12; 41, 42) at a transversely central position, characterized in that said first and second plates (11, 12; 41, 42) have rows of sawteeth (19, 22; 46, 47, 50, 51) along longitudinal edges thereof facing each other, and in that one of said first and second plates (12; 42) has a pair of laterally spaced ridges (23, 24; 52, 53) disposed on a surface thereof remote from the other plate (11; 41) one on each side of said connector post (13, 43) equidistantly therefrom.

2. A bottom stop according to claim 1, said first and second plates (11, 12) having longitudinally opposite ends (11a, 12a, 11b, 12b), said connector post (13) having one end (13a) terminating short of one of said longitudinally opposite ends (11a, 12a) of each plate and another end (13b) lying flush with the other opposite end (11b, 12b) of each plate.

3. A bottom stop according to claim 2, said sawteeth (19, 22) being progressively tapered off toward said one of the opposite ends (11a, 12a).

4. A bottom stop according to claim 1, said first and second plates (11, 12; 41, 42) being

integrally joined by said connector post (13, 43).

5. A bottom stop according to claim 1, said other plate (11; 41) having a pair of longitudinal side flanges (17, 18; 44, 45), said rows of sawteeth (19; 46, 47) on said other plate (11; 41) being defined on said longitudinal side flanges (17, 18; 44, 45).

6. A bottom stop according to claim 5, said one plate (42) having a pair of longitudinal side flanges (48, 49), said rows of sawteeth (50, 51) being defined on said last-mentioned longitudinal side flanges (48, 49).

7. A bottom stop according to claim 1, said ridges (23, 24; 52, 53) extending the full length of said one plate (12; 42).

8. A bottom stop according to claim 1, said other plate (11) having a surface (14) with an ornamental pattern (15).

9. A bottom stop according to claim 1, said first and second plates (11, 12; 41, 42) being rectangular in shape and of substantially the same size.

0110346

FIG. 1

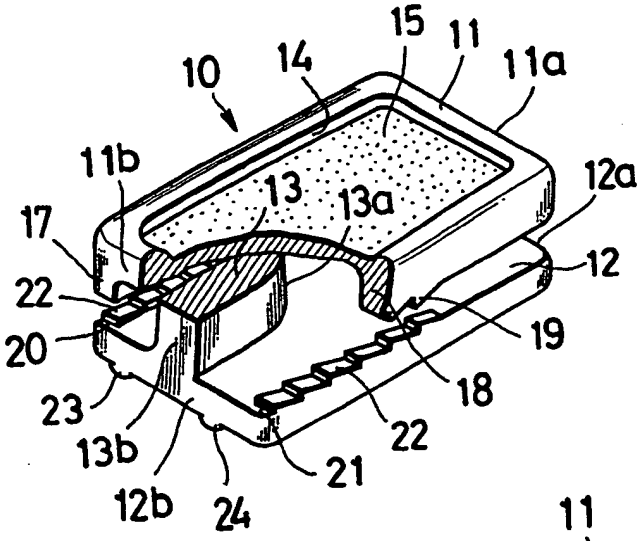


FIG. 2

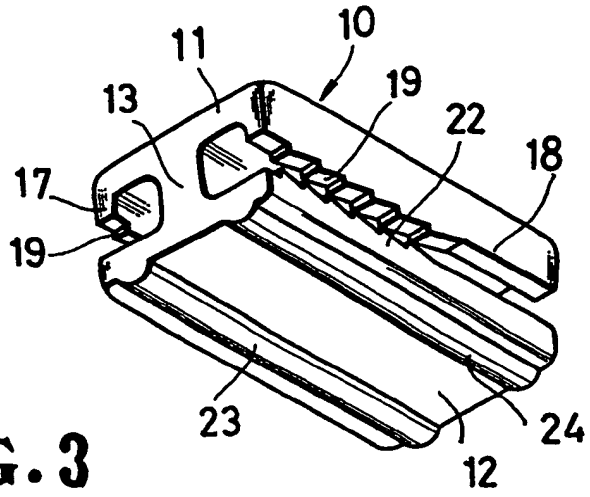
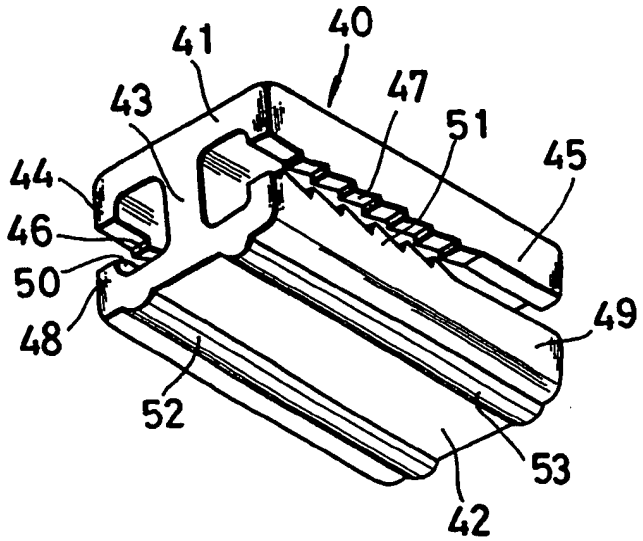


FIG. 3



0110346

FIG. 4

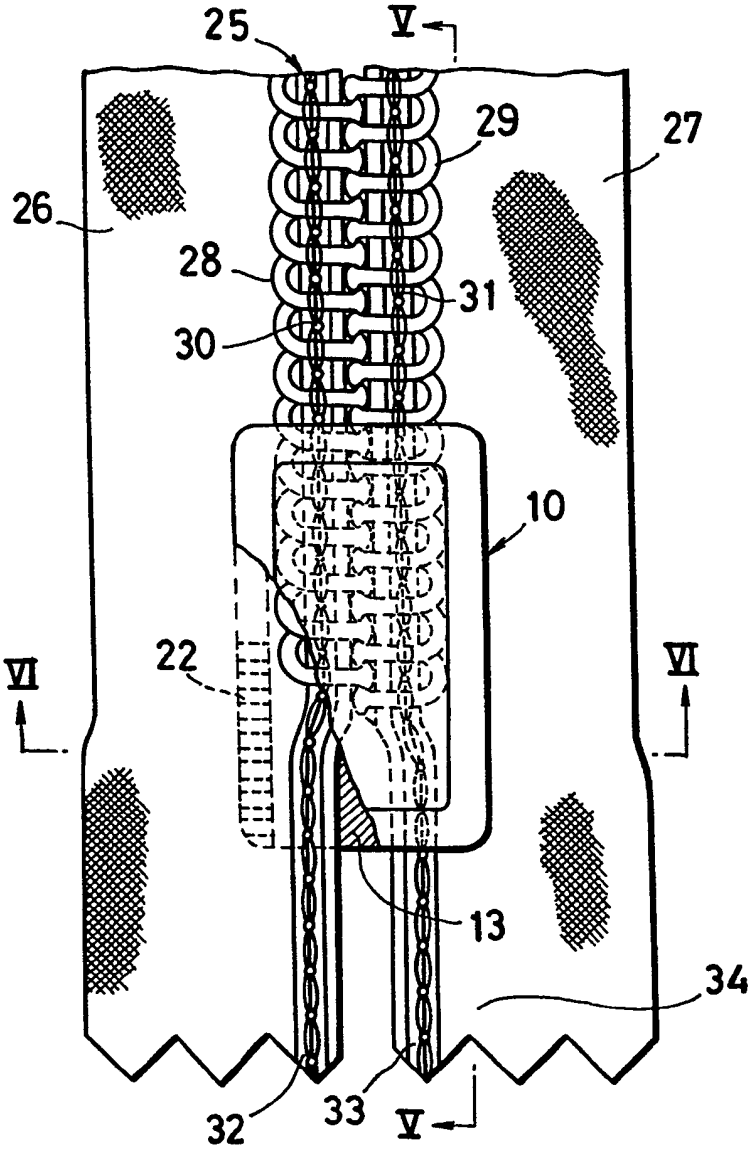


FIG. 5

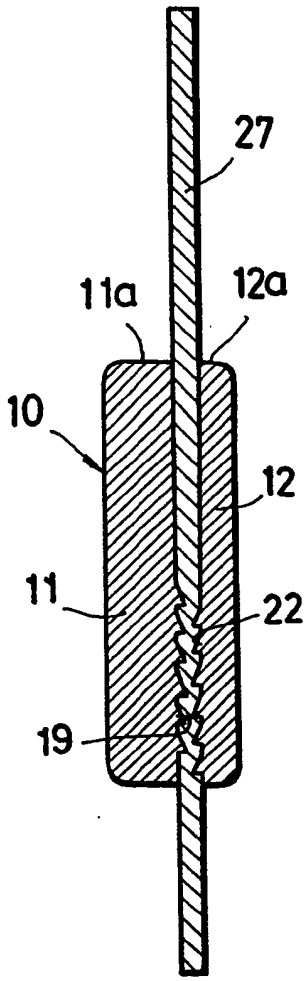
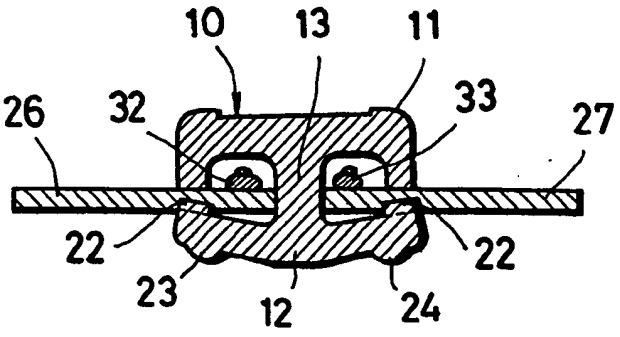


FIG. 6



European Patent Office

EUROPEAN SEARCH REPORT

0110346
Application number

EP 83111826.0

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
X	EP - A1 - 0 041 237 (YOSHIDA KOGYO K.K.); * Fig. 2,5,6 *	1,3,5, 6,7,9	A 44 B 19/36
X	US - A - 4 112 553 (WEITZNER) * Fig. 1,2 *	1,3,5, 6,9	
X	US - A - 3 953 912 (FUKUROI) * Fig. 2b *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

A 44 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	09-03-1984	NETZER

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO Form 1503. 03 82